10/080839
STN Search Summary

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     FILE 'REGISTRY' ENTERED AT 15:16:33 ON 20 APR 2004
L3             4 S 6.1.1.2

     FILE 'CAPLUS' ENTERED AT 15:17:39 ON 20 APR 2004
L4           451 S 9023-44-3/RN
L5          2085 S TRYPTOPHAN? (3W) (LIGASE OR SYNTHETASE OR SYNTHASE)
L6          2120 S L4 OR L5
L7           145 S L6 (P) HUMAN
L8             9 S L7 (P) TRUNCAT?
L9             4 S L7 AND ELASTASE
L10            1 S L9 NOT L8
L11           17 S L6 (P) TRUNCAT?
L12            8 S L11 NOT L8
L13            0 S L12 AND ELASTASE
L14          181 S L6 (P) (TRUNCAT? OR FRAGMENT?)
L15          181 S L6 (30W) (TRUNCAT? OR FRAGMENT?)
L16          181 S (TRUNCAT? OR FRAGMENT?) (P) (L4 OR L5)
L17          172 S TRYPTOPHAN (P) (LIGASE OR SYNTHETASE OR SYNTHASE) (P) (TRUNCA
L18            6 S L17 AND L4
L19          195 S TRYPTOPHAN (P) (LIGASE OR SYNTHETASE OR SYNTHASE) (P) (TRUNCA
L20            8 S L19 AND L4
L21            0 S L18 NOT L20
L22            2 S L20 NOT L18

L3   ANSWER 4 OF 4  REGISTRY  COPYRIGHT 2004 ACS on STN
RN   9023-44-3  REGISTRY
CN   Synthetase, tryptophanyl-transfer ribonucleate (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   E.C. 6.1.1.2
CN   Tryptophan translase
CN   Tryptophan-tRNA synthetase
CN   Tryptophanyl ribonucleic synthetase
CN   Tryptophanyl-transfer ribonucleate synthetase
CN   Tryptophanyl-transfer ribonucleic acid synthetase
CN   Tryptophanyl-transfer ribonucleic synthetase
CN   Tryptophanyl-transfer RNA synthetase
CN   Tryptophanyl-tRNA synthase
CN   Tryptophanyl-tRNA synthetase
LC   STN Files:   AGRICOLA, BIOSIS, BIOTECHNO, CA, CAPLUS, EMBASE, TOXCENTER,
       USPATFULL

L10  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2004 ACS on STN
AN   2003:757728  CAPLUS
TI   Human diabetes-mediating proteins with altered expression levels
     in islet of Langerhans cells exposed to cytokines, and uses for diagnosis,
     treatment and prevention of diabetes
IN   Larsen, Peter Mose; Fey, Stephen J.; Nerup, Jorn; Karlsen, Allan E.
SO   PCT Int. Appl., 60 pp.
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ----------------  ----  --------      ---------------  --------
PI   WO 2003078456     A2    20030925      WO 2003-DK190    20030320
     WO 2003078456     A3    20040115
PRAI DK 2002-431       A     20020320
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L8 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:153107 CAPLUS
TI Crystal Structure of Human Tryptophanyl-tRNA Synthetase Catalytic Fragment: Insights into Substrate Recognition, tRNA Binding, and Angiogenesis Activity
AU Yu, Yadong; Liu, Yunqing; Shen, Ning; Xu, Xiang; Xu, Feng; Jia, Jie; Jin, Youxin; Arnold, Eddy; Ding, Jianping
SO Journal of Biological Chemistry (2004), 279(9), 8378-8388

L8 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:106958 CAPLUS
TI A short peptide insertion crucial for angiostatic activity of human tryptophanyl-tRNA synthetase
AU Kise, Yoshiaki; Lee, Sang Won; Park, Sang Gyu; Fukai, Shuya; Sengoku, Toru; Ishii, Ryohei; Yokoyama, Shigeyuki; Kim, Sunghoon; Nureki, Osamu
SO Nature Structural & Molecular Biology (2004), 11(2), 149-156

L8 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:992946 CAPLUS
TI Biologically active fragment of a human tRNA synthetase inhibits fluid shear stress-activated responses of endothelial cells
AU Tzima, E.; Reader, J. S.; Irani-Tehrani, M.; Ewalt, K. L.; Schwartz, M. A.; Schimmel, P.
SO Proceedings of the National Academy of Sciences of the United States of America (2003), 100(25), 14903-14907

L8 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:928137 CAPLUS
TI Protein and cDNA sequences of a human tryptophanyl -tRNA synthetase and therapeutic uses for the regulation of angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002182666	A1	20021205	US 2001-813718	20010321
PRAI US 2001-813718		20010321		

L8 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:675861 CAPLUS
TI Truncated human tryptophanyl-tRNA synthetase (Trp-RS) and therapeutic uses thereof for the regulation of angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke; Friedlander, Martin
SO PCT Int. Appl., 83 pp.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002067970	A1	20020906	WO 2002-US5185	20020222
US 2003017564	A1	20030123	US 2002-80839	20020222
EP 1377305	A1	20040107	EP 2002-802957	20020222
PRAI US 2001-270951P	P	20010223		
WO 2002-US5185	W	20020222		

L8 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:747979 CAPLUS
TI Preparation and characterization of truncated human tryptophanyl-tRNA synthetase useful for the regulation of angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke
SO PCT Int. Appl., 149 pp.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001075078	A1	20011011	WO 2001-US8975	20010321
	EP 1274834	A1	20030115	EP 2001-918876	20010321
	JP 2004500121	T2	20040108	JP 2001-572952	20010321
	US 2004009163	A1	20040115	US 2002-240532	20020930
PRAI	US 2000-193471P	P	20000331		
	WO 2001-US8975	W	20010321		

L8 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:747812 CAPLUS
TI Preparation and characterization of truncated human tyrosyl-tRNA synthetase useful for the regulation of angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke
SO PCT Int. Appl., 150 pp.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001074841	A1	20011011	WO 2001-US8966	20010321
	EP 1272506	A1	20030108	EP 2001-924232	20010321
	JP 2003529354	T2	20031007	JP 2001-572530	20010321
PRAI	US 2000-193471P	P	20000331		
	WO 2001-US8966	W	20010321		

L12 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:514722 CAPLUS
TI Protein kinase activity tightly associated with bovine tryptophanyl-tRNA synthetase
AU Elizarov, S. M.; Zabazarnykh, M. Yu.; Musolyamov, A. Kh.; Kovaleva, G. K.; Egorov, Ts. A.; Kiselev, L. L.
SO Molecular Biology (Translation of Molekulyarnaya Biologiya (Moscow)) (1997), 31(2), 210-218

L12 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:211421 CAPLUS
TI Importance of conserved and variable C-terminal residues for the activity and thermal stability of the .beta. subunit of tryptophan synthase
AU Yang, Li-Hong; Ahmed, S. Ashraf; Rhee, Sangkee; Miles, Edith Wilson
SO Journal of Biological Chemistry (1997), 272(12), 7859-7866

L18 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1980:2291 CAPLUS
TI The effect of tRNA and tryptophanyl adenylate on limited proteolysis of beef pancreas tryptophanyl-tRNA synthetase
AU Sheinker, V. Sh.; Beresten, S. F.; Degtyarev, S. Kh.; Kiselev, L. L.
SO Nucleic Acids Research (1979), 7(3), 625-37
AB Limited proteolysis of tryptophanyl-tRNA synthetase (I) was used to detect changes in I in the presence of substrates. Trypsinolysis of each of the 2 identical subunits occurred in succession from the

N-terminus as follows: 60.fwdarw.51.fwdarw.40.fwdarw.24 kilodaltons. The transition 51.fwdarw.40 was hindered in the tryptophanyl adenylate-I complex. Yeast tryptophan-specific tRNA (tRNATrp) accelerated the 1st steps of hydrolysis and decelerated the transition 40.fwdarw.24. Once tRNATrp was added to the I-adenylate complex, the protective effect of the adenylate disappeared. The same effects were found also in the presence of tRNATrp oxidized with NaIO4 and tRNATrp lacking the 3'-terminal adenosine. Oxidized tRNATrp (but not tRNATrp without the 3'-adenosine) accelerated tryptophan-dependent hydrolysis of ATP catalyzed by I. A scheme is proposed for the interaction of yeast tRNATrp with beef pancreas I involving the assocn. of tRNA with a pos. charged site(s) of I and the changes in the conformation of I manifested by unfolding of the acidic N-terminal fragment of the polypeptide chain and in the exposure of the adenylate.

L18 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1979:489338 CAPLUS
TI Immunochemical studies of beef pancreas tryptophanyl-tRNA synthetase and its fragments. Determination of the number of antigenic determinants and a comparison with tryptophanyl- tRNA synthetases from other sources and with reverse transcriptase from avian myeloblastosis virus
AU Scheinker, V. Sh.; Beresten, S. F.; Mazo, A. M.; Ambartsumyan, N. S.; Rokhlin, O. V.; Favorova, O. O.; Kiselev, L. L.
SO European Journal of Biochemistry (1979), 97(2), 529-40
AB The IgG fraction of the antiserum from rabbits immunized with homogeneous beef pancreas tryptophanyl-tRNA synthetase (I) inhibits the enzyme activity in the reactions of both tRNATrp aminoacylation and tryptophan activation. Fab fragments of IgG act in a similar way. Common antigenic determinants were detected in I from beef, pig, chicken, and rat livers using pure antibodies against beef pancreas I. This observation indicates the evolutionary stability of certain structural features of I. The interaction of antibodies with the fragments of beef I produced by endogenous and tryptic proteolysis of the enzyme was studied. One third of the antiserum antibodies interacting with the C-terminal fragment of I (mol. wt. .apprx.40,000) inhibits its activity, whereas the antibodies to the N-terminal fragment (mol. wt. .apprx.20,000) have no effect on the enzyme activity. The immunochem. identity of the 2 I fragments, differing in their enzymic activity supports the assumption that the loss of enzymic activity of the tryptic fragment is caused by lack of a small peptide which is retained in case of endogenous proteolysis; probably the amino acid residues of this peptide participate in formation of active site of I. A radioimmunochem. method is described for detg. the no. of antigenic determinants. One mol. of I bound 9 mols. of Fab fragments. Antibodies against I from beef pancreas do not noticeably inhibit the activity of reverse transcriptase from avian myeloblastosis virus. No antigenic determinants in common were detected in reverse transcriptase and I by radioimmunochem. assays.

L18 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1979:70388 CAPLUS
TI Immunochemical properties of tryptophanyl-tRNA synthetase and its fragments
AU Beresten, S. F.; Sheinker, V. Sh.; Rokhlin, O. V.
SO Molekulyarnaya Biologiya (Moscow) (1978), 12(6), 1408-19
LA Russian

AB The interaction between beef pancreas tryptophanyl-tRNA synthetase and its fragments produced after limited proteolysis with the IgG fraction of antiserum and with the Fab fragment of IgG was studied. Both the intact antibodies and Fab fragments inhibit the enzyme activity in tRNA aminoacylation and tryptophan -dependent ATP-32P-pyrophosphate exchange reactions. However, the enzyme inhibited by antibodies is still able to form a complex with tryptophanyl-tRNA. The enzymically active fragment obtained after endogenous proteolysis interacts only with 33% of the antibodies against native enzyme. The fragment produced by trypsinolysis possesses similar immunochem. properties. This fragment has almost the same mol. wt. but is enzymically inactive. Pure antibodies against tryptic fragment isolated by means of a specific immunoabsorbent inhibit the enzymic activity. The antibodies which do not interact with this fragment (67% of the total amt. of antibodies) have no influence on the activity. The immunochem. identity of the 2 synthetase fragments differing in their enzymic activity supports the assumption that the loss of activity of the tryptic fragment is caused by lack of a small peptide which is retained in case of endogeneous proteolysis. Probably, the amino acid residues of this peptide participate in formation of the active center of tryptophanyl-tRNA synthetase. A new procedure for detn. of the no. of antigenic determinants in proteins is developed. It is shown by this method that beef pancreas tryptophanyl-tRNA synthetase contains 9.+-.1 antigenic determinants.

L18 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1976:70981 CAPLUS
TI Limited proteolysis of tryptophanyl-tRNA synthetase from beef pancreas
AU Epely, Sylvie; Gros, Claude; Labouesse, Julie; Lemaire, Genevieve
SO European Journal of Biochemistry (1976), 61(1), 139-46
AB Treatment of purified tryptophanyl-tRNA synthetase with either chymotrypsin, papain, subtilisin, or elastase converts all the enzyme into a high-mol.-wt. intermediate. This protease-resistant core mol. has the same dimeric structure as the native protein and possesses the ability to bind substrates (tryptophan, ATP, and tryptophan -specific tRNA) but is catalytically inactive. The monomer mol. wt. of the protease-treated enzyme is 39,000 compared to 54,000 for the intact mol. Chem. studies indicate that proteases excise the N-terminal part of the polypeptide chain. It has been demonstrated previously that removal of a 13,000 dalton fragment from the N-terminal region of the tryptophanyl-tRNA synthetase converts the native enzyme to another active form. Cleavage of 20 addnl. amino acids produces the inactive protease-resistant core.

L18 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1975:94791 CAPLUS
TI Limited proteolysis of the tryptophanyl-tRNA synthetase
AU Prasolov, V. S.; Favorova, O. O.; Margulis, G. V.; Kiselev, L. L.
SO Biochimica et Biophysica Acta (1975), 378(1), 92-106
AB Earlier studies showed that native tryptophanyl-tRNA synthetase from beef pancreas is composed of 2 apparently identical subunits having a mol. wt. of 60,000 .+-. 2000 each. Incubation of the purified enzyme with trypsin under restrictive conditions results in splitting of each subunit to form an enzymically inactive polypeptide chain of mol. wt. 24,500 .+-. 1500. During proteolysis, 2 distinct intermediate forms of mol. wt. 51,000 .+-. 2000 and 40,000 .+-. 2000 and fragments of mol. wt.

14,000 .+-. 2500 are formed. The presence of substrates, viz. ATP, tryptophan, or tryptophanyl adenylate, decreases the rate of proteolysis. However, a band pattern monitored by acrylamide gel electrophoresis is qual. indistinguishable from that obtained in the absence of substrates. Native and trypsin-modified subunits (the latter having a mol. wt. of 24,500) have been maleylated, reduced, carboxymethylated, and subjected to exhaustive digestion by trypsin followed by peptide mapping. Comparison of the finger prints has shown that the trypsin-modified subunit represents a polypeptide with lowered content of dicarboxylic amino acids. The no. of peptides revealed after complete proteolysis of native and trypsin-modified subunits does not favor the presence of long repetitive sequences in each subunit and is at variance with some bacterial aminoacyl-tRNA synthetases. Study of the fluorescence polarization of 1-anilino-8-naphthalene sulfonate adsorbed on the dimeric tryptophanyl-tRNA synthetase, indicates that the mol. behaves as a complete entity in Brownian rotation. The trypsin-resistant end products, composed of 2 types of polypeptides (mol. wts. 24,500 and 14,000), remain assocd. with each other. From the mol. wt. of this assoc., it follows that each fragment is present in the assoc. in duplicate. When the purifn. procedure was carried out in the absence of a protease inhibitor, the active modified enzyme form was obtained. As judged from the mol. wt. values, it is composed of 2 equal subunits corresponding to one of the products of limited proteolysis. The data presented are compatible with compact 3-dimensional structure of tryptophanyl-tRNA synthetase having very limited regions exposed to exogenous or endogenous proteolysis.

L22 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1981:79316 CAPLUS
TI Structure of tryptophanyl-tRNA-synthetase and products of its limited proteolysis according to circular dichroism data
AU Nurbekov, M. K.; Bolotina, I. A.; Lugauskas, V.; Favorova, O. O.
SO Doklady Akademii Nauk SSSR (1980), 255(2), 482-6 [Biochem.]
LA Russian
AB The secondary and tertiary structures of the following were studied by CD: (1) native, dimeric tryptophanyl-tRNA synthetase (I) (subunit mol. wt. = 60,000), (2) the dimer composed of 40,000-mol-wt. subunits (E40) obtained from limited elastase digestion, and (3) the pseudodimer (E24+14, in which the 40,000-mol-wt. subunits are cleaved into 24,500- and 14,000-mol-wt. fragments which remain in an assocd. state). The structure of native I from which Zn was removed was also studied. The far-UV CD spectra of modified forms differed from that of native I. The relative proportions of amino acid residues in different types of structure (.alpha.-helix, .beta. chain, random coil) did not differ between native I, Zn-free I, and E40, whereas E24+14 showed a decreased proportion of residues in .alpha.-helix structure. The CD spectrum of E40 in the near-UV region did not differ significantly from native I, indicating that the removal of 20,000 daltons from the N-terminal portion of the chains does not affect the basic hydrophobic portion of the enzyme mol. in which arom. amino acids reside. The CD spectrum of E24+14 was initially similar to that of E40 but changed with time; the peaks gradually decreased and finally disappeared, indicating conformational destabilization of the subunits. For Zn-free I, CD peaks were almost fully absent, which suggests a role of the metal in maintaining the native conformation of the mol.

L22 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1980:36826 CAPLUS
TI Tryptophanyl-tRNA synthetase: limited hydrolysis by elastase and preparation of a single-site form of the enzyme
AU Degtyarev, S. Kh.; Beresten, S. F.
SO Molekulyarnaya Biologiya (Moscow) (1979), 13(6), 1247-54
LA Russian
AB Each subunit of the dimeric tryptophanyl-tRNA synthetase from beef pancreas was subjected to limited hydrolysis by elastase in 2 stages, according to the scheme: 60,000 .fwdarw. 51,000 .fwdarw. 40,000 daltons. In the course of the 2nd step, tryptophanyl-tRNA synthetase lost its enzymic activity. In the presence of substrates, the pattern of fragmentation did not change. Formation of tryptophanyladenylate-enzyme complex decreased the rate of proteolysis. Using the ability of synthetase to form 1 mol of stable aminoacyladenylate per mol of synthetase, a one-site enzyme was obtained by action of elastase on the aminoacyladenylate-enzyme complex. This one-site enzyme consisted of 2 subunits; one had a mol. wt. of 51,000 daltons and was active and the other had a mol. wt. of 40,000 daltons and was inactive. The one-site enzyme had Km values for all substrates for both aminoacylation and ATP-pyrophosphate-32P exchange reactions which were similar to values of Km for the native enzyme.